**Objectives**:

1. Demonstrate your understanding of density
2. Demonstrate your ability to calculate density
3. Demonstrate your ability to measure mass and volume
4. Demonstrate your ability to use Scientific Inquiry to solve a problem

**Goal**:

Design and create an aluminum floatation device to float as many pennies as possible in water.

**Data**:

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Room Temperature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Water Temperature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Water Density: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Aluminium Density: 2.70 g/cm3

**Procedure:**

1. Collect data
2. Obtain sample tin foil
3. Draw a design #1
4. Make a sample #1
5. Test #1
6. Record observations #1
7. Obtain sample tin foil
8. Draw a design #2
9. Make a sample #2
10. Test #2
11. Record observations #2
12. Chose design for full scale model
13. Obtain full size tin foil
14. Create full size floatation device
15. Test
16. Record observations

Write a paragraph summarising the most important design considerations.

**Design Observation**

Drawing #1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Design Observation**

Drawing #2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Design Observation**

Full size device \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Design Summary Paragraph**

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| Item | Points | Notes |
| Drawing 1 | 5 pts. | Neat (2 pts.)  Labelled (3 pts.) |
| Observation 1 | 5 pts. | 3 observations (3 pts.)  Conventions (2 pts.) |
| Drawing 2 | 5 pts. | Neat (2 pts.)  Labelled (3 pts.) |
| Observation 2 | 5 pts. | 3 observations (3 pts.)  Conventions (2 pts.) |
| Drawing 3 | 5 pts. | Neat (2 pts.)  Labelled (3 pts.) |
| Observation3 | 5 pts. | 3 observations (3 pts.)  Conventions (2 pts.) |
| Summary Paragraph | 10 pts. | Introduction (1 pt.)  Conclusion (1 pt.)  Capitals (1 pts.)  End marks (1 pts.)  Content (6pts.) |